

PROC NLP: Nonlinear Minimization

NOTE: Initial point was changed to be feasible for boundary and linear constraints.

Exhibit D

PROC NLP: Nonlinear Minimization

N Parameter	Estimate	Optimization Start			Upper Bound	Active Bound
		Parameter Estimates	Lower Bound	Constraint		
		Objective Function			Constraint	Constraint
1 CPO	0.100000	23.561196	0.100000		0.100000	Equal BC
2 _BOND	0.209167	17.327263	0.112500		1.000000	
3 _CASH_	0.209167	16.425350	0		1.000000	
4 _EAFE	0.180000	2.759056	0		0.180000	Upper BC
5 _ML_HYM	0.092500	13.147478	0		0.100000	
6 _W5000	0.209167	-4.304211	0		1.000000	

Value of Objective Function = 5.1142576555

Linear Constraints

1	-8.327E-17	: ACT	1.0000	=	+	1.0000	* CPO	+	1.0000	* _BOND	+	1.0000	* _CASH_	+	1.0000	* _EAFE	+
2			1.0000	*	_ML_HYM	+	1.0000	*	_W5000								
2	0.30917	:	0	<=	+	1.0000	* CPO	+	1.0000	* _W5000							
3	0.63083	:	0.9400	>=	+	1.0000	* CPO	+	1.0000	* _W5000							
4	0.48917	:	0	<=	+	1.0000	* CPO	+	1.0000	* _EAFE	+	1.0000	* _W5000				
5	0.40333	:	0.8925	>=	+	1.0000	* CPO	+	1.0000	* _EAFE	+	1.0000	* _W5000				

PROC NLP: Nonlinear Minimization

Null Space Method of Quadratic Problem

Parameter Estimates 6
 Lower Bounds 6
 Upper Bounds 6
 Linear Constraints 5

Optimization Start

Active Constraints 3 Objective Function 5.1142576555
 Max Abs Gradient Element 17.266446025

Iter	Restarts	Function Calls	Active Constraints	Objective Function	Objective Function Change	Max Abs Gradient Element	Step Size	Slope of Search Direction
1	0	2	4	1.02847	4.0858	1.2405	0.922	-8.221
2	0	3	5	1.02187	0.00660	1.0173	0.144	-0.0492
3	0	4	5'	1.00583	0.0160	1.4148	0.688	-0.0356
4	0	5	4'	0.87553	0.1303	1.0785	1.000	-0.261
5	0	6	3'	0.85664	0.0189	0.0356	1.000	-0.0378
6	0	7	3	0.85609	0.000544	1.36E-15	1.000	-0.0011

Optimization Results

Iterations 8
 Gradient Calls 6 Function Calls 8
 Objective Function 0.8560941258 Max Abs Gradient Element 9.064933E-16
 Slope of Search Direction -0.001088002

ABSGCONV convergence criterion satisfied.

PROC NLP: Nonlinear Minimization

Optimization Results
Parameter Estimates

N Parameter	Estimate	Approx Std Err	t Value	Approx Pr > t	Gradient Objective Function	Active Bound Constraint
1 CPO	0.100000	0	9999.990000	0.000063662	17.121883	Equal BC
2 _BOND	0.116470	0.761171	0.153015	0.903337	-1.77636E-15	
3 _CASH_	0.026496	0.803287	0.032985	0.979009	-8.88178E-16	
4 _EAFE	0.023428	0.288107	0.081318	0.948345	-2.22045E-16	
5 _ML_HYM	0	0	0	1.000000	0.046529	Lower BC
6 _W5000	0.733605	0.256966	2.854870	0.214492	0	

Value of Objective Function = 0.8560941258

Linear Constraints Evaluated at Solution

1 ACT	0	=	-1.0000	+	1.0000	* CPO	+	1.0000	* _BOND	+	1.0000	* _CASH_	+	1.0000	* _EAFE	+
2	1.0000	* _ML_HYM	+	1.0000	* _W5000											
3	0.83361	=	0	+	1.0000	* CPO	+	1.0000	* _W5000							
4	0.10639	=	0.9400	-	1.0000	* CPO	-	1.0000	* _W5000							
5	0.85703	=	0	+	1.0000	* CPO	+	1.0000	* _EAFE	+	1.0000	* _W5000				
6	0.03547	=	0.8925	-	1.0000	* CPO	-	1.0000	* _EAFE	-	1.0000	* _W5000				

._RHS_

0.856094

Minimum Tracking Error Portfolio

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PROC NLP: Nonlinear Minimization

Deleted Identical Linear Constraints

0.100000 >=

NOTE: Initial point was changed to be feasible for boundary and linear constraints.

PROC NLP: Nonlinear Minimization

Optimization Start

N Parameter	Estimate	Parameter Estimates			Active Bound Constraint
		Gradient	Lower Bound	Upper Bound	
		Function	Constraint	Constraint	
1 CPO	0.100000	11.383390	0.100000	0.100000	Equal BC
2 FBNDX	0.078351	4.403253	0	1.000000	
3 FCNTX	0.550993	3.018354	0	1.000000	
4 FGRIX	0.270656	1.954756	0	1.000000	
5 FLPSX	0	0.756843	0	1.000000	Lower BC
6 FMAGX	0	-1.114877	0	1.000000	Lower BC
7 FOSFX	0	-1.336266	0	1.000000	Lower BC
8 FUSEX	0	-1.175001	0	1.000000	Lower BC
9 _GIC_	0	3.731108	0	1.000000	Lower BC

Value of Objective Function = 1.7219712407

Linear Constraints

1	4.4409E-16 :	ACT	1.0000	=	+	1.0000	* CPO	+	1.0000	* FBNDX	+	1.0000	* FCNTX	+	1.0000	* FGRIX	+	1.0000			
	* FLPSX	+	1.0000	* FMAGX	+	1.0000	* FOSFX	+	1.0000	* FUSEX	+	1.0000	* _GIC_	+	0.000300	* FGRIX	+	0.0146	* FOSFX	+	0.8000
2	* 0.05278 :		0.0165	<=	+	0.8603	* FBNDX	+	0.00320	* FCNTX	+	0.000300	* FGRIX	+	0.0146	* FOSFX	+	0.0146	* FOSFX	+	0.8000
	* _GIC_																				
3	* 0.14722 :		0.2165	>=	+	0.8603	* FBNDX	+	0.00320	* FCNTX	+	0.000300	* FGRIX	+	0.0146	* FOSFX	+	0.0146	* FOSFX	+	0.8000
	* _GIC_																				
4	* 0.14507 :		-0.0735	<=	+	0.1397	* FBNDX	+	0.0581	* FCNTX	+	0.1057	* FGRIX	+	0.1915	* FLPSX	+	0.1915	* FLPSX	+	0.0561
	* FMAGX	+	0.0814	* FOSFX	+	0.00830	* FUSEX	+	0.2000	* _GIC_	+	0.1057	* FGRIX	+	0.1915	* FLPSX	+	0.1915	* FLPSX	+	0.0561
5	* 0.05493 :		0.1265	>=	+	0.1397	* FBNDX	+	0.0581	* FCNTX	+	0.1057	* FGRIX	+	0.1915	* FLPSX	+	0.1915	* FLPSX	+	0.0561
	* FMAGX	+	0.0814	* FOSFX	+	0.00830	* FUSEX	+	0.2000	* _GIC_	+	0.1304	* FLPSX	+	0.0277	* FMAGX	+	0.0277	* FMAGX	+	0.7889
6	* 0.16000 :		-0.0566	<=	+	0.1800	* FCNTX	+	0.0157	* FGRIX	+	0.1304	* FLPSX	+	0.0277	* FMAGX	+	0.0277	* FMAGX	+	0.7889
	* FOSFX	+	0.0193	* FUSEX	+	0.1800	* FCNTX	+	0.0157	* FGRIX	+	0.1304	* FLPSX	+	0.0277	* FMAGX	+	0.0277	* FMAGX	+	0.7889
7	1.7347E-17 :	ACT	0.1034	>=	+	0.00540	* FCNTX	+	0.0339	* FGRIX	+	0.00480	* FLPSX	+	0.0294	* FOSFX	+	0.0294	* FOSFX	+	0.00890
	* FOSFX	+	0.0193	* FUSEX	+	0.00540	* FCNTX	+	0.0339	* FGRIX	+	0.00480	* FLPSX	+	0.0294	* FOSFX	+	0.0294	* FOSFX	+	0.00890
8	* 0.10000 :		0.1000	>=	+	0.00540	* FCNTX	+	0.0339	* FGRIX	+	0.00480	* FLPSX	+	0.0294	* FOSFX	+	0.0294	* FOSFX	+	0.00890
9	* 0.11215 :		-0.1000	<=	+	0.00540	* FCNTX	+	0.0339	* FGRIX	+	0.00480	* FLPSX	+	0.0294	* FOSFX	+	0.0294	* FOSFX	+	0.00890
	* FUSEX																				
10	* 0.08785 :		0.1000	>=	+	0.00540	* FCNTX	+	0.0339	* FGRIX	+	0.00480	* FLPSX	+	0.0294	* FOSFX	+	0.0294	* FOSFX	+	0.00890
	* FUSEX																				
11	-8.327E-17 :	ACT	0.8470	<=	+	1.0000	* CPO	+	0.9333	* FCNTX	+	0.8601	* FGRIX	+	0.8037	* FLPSX	+	0.8037	* FLPSX	+	0.9439
	* FMAGX	+	0.8746	* FOSFX	+	0.9828	* FUSEX	+	0.9333	* FCNTX	+	0.8601	* FGRIX	+	0.8037	* FLPSX	+	0.8037	* FLPSX	+	0.9439
12	* 0.02000 :		0.8670	>=	+	1.0000	* CPO	+	0.9333	* FCNTX	+	0.8601	* FGRIX	+	0.8037	* FLPSX	+	0.8037	* FLPSX	+	0.9439
	* FMAGX	+	0.8746	* FOSFX	+	0.9828	* FUSEX	+	0.9333	* FCNTX	+	0.8601	* FGRIX	+	0.8037	* FLPSX	+	0.8037	* FLPSX	+	0.9439

PROC NLP: Nonlinear Minimization

Null Space Method of Quadratic Problem

Parameter Estimates 9
 Lower Bounds 9
 Upper Bounds 9
 Linear Constraints 12

Optimization Start

Active Constraints (+) 8 Objective Function 1.7219712407
 Max Abs Gradient Element 1.455060137

Iter	Restarts	Function Calls	Active Constraints	Objective Function	Objective Function Change	Max Abs Gradient Element	Step Size	Slope of Search Direction
1	0	2	7'	1.39796	0.3240	2.5134	1.000	-0.648
2	0	3	6'	0.46385	0.9341	1.0729	1.000	-1.868
3	0	4	5'	0.38259	0.0813	0.6061	1.000	-0.163
4	0	5	6	0.35422	0.0284	0.4944	0.141	-0.216
5	0	6	5'	0.29360	0.0606	0.6479	1.000	-0.121
6	0	7	5'	0.28136	0.0122	0.3710	0.464	-0.0343
7	0	8	6	0.25006	0.0313	0.0438	0.395	-0.0987
8	0	9	5'	0.24989	0.000169	0.0523	1.000	-0.0003
9	0	10	5	0.24977	0.000118	2.29E-16	1.000	-0.0002

Optimization Results

Iterations	9 Function Calls	11
Gradient Calls	10 Active Constraints	5
Objective Function	0.2497684956 Max Abs Gradient Element	2.775558E-16
Slope of Search Direction	-0.000235093	

ABSGCONV convergence criterion satisfied.

Optimization Results Parameter Estimates

Gradient Objective Function	Active Bound Constraint	Equal BC	Lower BC	Lower BC
9.134575				
0.601800				
-0.015954				
0.604141				
0.068897				
0.244587				
-1.05752				
0.258957				
0.291974				

Value of Objective Function = 0.2497684956

Linear Constraints Evaluated at Solution

[illegible]

Minimum Tracking Error Portfolio

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RHS

0.249768

Minimum Tracking Error Portfolio

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0.040974

1

Iteration 1 minobjfn = 99999 last objfnval = 14:58 Thursday, April 25, 2002 13

PROC NLP: Nonlinear Minimization

Deleted Identical Linear Constraints

0.100000 >=

NOTE: Initial point was changed to be feasible for boundary and linear constraints.

PROC NLP: Nonlinear Minimization

Optimization Start

N Parameter	Estimate	Parameter Estimates			Active Bound
		Gradient Objective Function	Lower Bound Constraint	Upper Bound Constraint	
1 CPO	0.100000	8.575135	0.100000	0.100000	Equal BC
2 FBNDX	0.115698	1.290136	0	1.000000	
3 FCNTX	0.168840	0.569871	0	1.000000	
4 FGRIX	0	0.965063	0	1.000000	Lower BC
5 FLPSX	0	-0.390853	0	1.000000	Lower BC
6 FMAGX	0.396430	0.379284	0	1.000000	Lower BC
7 FOSFX	-2.7756E-17	-1.562442	0	1.000000	Lower BC
8 FUSEX	0.219032	0.218568	0	1.000000	
9 _GIC_	-5.55112E-17	0.669596	0	1.000000	Lower BC

Value of Objective Function = 0.496978727

Linear Constraints

1	1.1102E-16	: ACT	1.0000	=	+	1.0000	* CPO	+	1.0000	* FBNDX	+	1.0000	* FCNTX	+	1.0000	* FGRIX	+	1.0000
2	* FLPSX	+	1.0000	* FMAGX	+	1.0000	* FOSFX	+	1.0000	* FUSEX	+	1.0000	* _GIC_	+	0.0146	* FOSFX	+	0.8000
3	* _GIC_	:	0.08361	:	+	0.8603	* FBNDX	+	0.00320	* FCNTX	+	0.000300	* FGRIX	+	0.0146	* FOSFX	+	0.8000
4	* _GIC_	:	0.11639	:	+	0.8603	* FBNDX	+	0.00320	* FCNTX	+	0.000300	* FGRIX	+	0.0146	* FOSFX	+	0.8000
5	* FMAGX	+	0.0814	* FOSFX	+	0.1397	* FBNDX	+	0.0581	* FCNTX	+	0.1057	* FGRIX	+	0.1915	* FLPSX	+	0.0561
6	* FMAGX	+	0.0814	* FOSFX	+	0.1397	* FBNDX	+	0.0581	* FCNTX	+	0.1057	* FGRIX	+	0.1915	* FLPSX	+	0.0561
7	* FOSFX	+	0.0193	* FUSEX	+	0.1800	* FCNTX	+	0.0157	* FGRIX	+	0.1304	* FLPSX	+	0.0277	* FMAGX	+	0.7889
8	* FOSFX	+	0.0193	* FUSEX	+	0.1800	* FCNTX	+	0.0157	* FGRIX	+	0.1304	* FLPSX	+	0.0277	* FMAGX	+	0.7889
9	* FUSEX	:	0.10286	:	+	0.00540	* FCNTX	+	0.0339	* FGRIX	+	0.00480	* FLPSX	+	0.0294	* FOSFX	+	0.00890
10	* FUSEX	:	0.09714	:	+	0.00540	* FCNTX	+	0.0339	* FGRIX	+	0.00480	* FLPSX	+	0.0294	* FOSFX	+	0.00890
11	-2.776E-17	: ACT	0.8470	<=	+	1.0000	* CPO	+	0.9333	* FCNTX	+	0.8601	* FGRIX	+	0.8037	* FLPSX	+	0.9439
12	* FMAGX	+	0.8746	* FOSFX	+	0.9828	* FUSEX	+	0.9333	* FCNTX	+	0.8601	* FGRIX	+	0.8037	* FLPSX	+	0.9439
13	* FMAGX	+	0.8746	* FOSFX	+	0.9828	* FUSEX	+	0.9333	* FCNTX	+	0.8601	* FGRIX	+	0.8037	* FLPSX	+	0.9439

PROC NLP: Nonlinear Minimization

Null Space Method of Quadratic Problem

Parameter Estimates 9
Lower Bounds 9
Upper Bounds 9
Linear Constraints 12

Optimization Start

Active Constraints (+) 6 Objective Function 0.4969787227
Max Abs Gradient Element 1.7842596228

Iter	Restarts	Function Calls	Active Constraints	Objective Function	Objective Function Change	Max Abs Gradient Element	Step Size	Slope of Search Direction
1	0	2	7	0.34831	0.1487	0.3396	0.390	-0.474
2	0	3	6'	0.33689	0.0114	0.7729	1.000	-0.0228
3	0	4	5'	0.29360	0.0433	0.6479	1.000	-0.0866
4	0	5	5'	0.28136	0.0122	0.3710	0.464	-0.0343
5	0	6	6	0.25006	0.0313	0.0438	0.395	-0.0987
6	0	7	5'	0.24989	0.000169	0.0523	1.000	-0.0003
7	0	8	5	0.24977	0.000118	1.11E-16	1.000	-0.0002

Optimization Results

Iterations 7 Function Calls 9
Gradient Calls 8 Active Constraints 5
Objective Function 0.2497684956 Max Abs Gradient Element 1.110223E-16
Slope of Search Direction -0.000235093

ABSGCONV convergence criterion satisfied.

Gradient Objective Function	Active Bound Constraint
9.134575	Equal BC
0.601800	Lower BC
0.015954	
0.604141	Lower BC
0.068897	
0.244587	
1.057572	
0.258957	
0.291974	

+	1.0000	*	FGR1X	+
+	0.0146	*	FOSFX	+
-	0.0146	*	FOSFX	-
+	0.1915	*	FLPSX	+
-	0.1915	*	FLPSX	-
+	0.0277	*	FWAGX	+
-	0.0277	*	FWAGX	-
+	0.0294	*	FOSFX	+
-	0.0294	*	FOSFX	-
+	0.8037	*	FLPSX	+
-	0.8037	*	FLPSX	-

Iteration 1 minobjfn = 99999 last objfnval =

 RHS

 0.249768

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Iteration 1 minobjfn = 99999 last objfnval =

0.249768

Obs	TICKER	_force		
		WGT	LOWER	UPPER
1	FBNDX	0.00000	0.0	1.0
2	FGRIX	0.00000	0.0	1.0
3	FCNTX	0.04097	0.0	1.0
4	_GIC_	0.07982	0.0	1.0
5	FOSFX	0.08691	0.0	1.0
6	CPO	0.10000	0.1	0.1
7	FLPSX	0.10185	0.0	1.0
8	FUSEX	0.25553	0.0	1.0
9	FMAGX	0.33491	0.0	1.0

		constrai		
Obs	TICKER	WGT	LOWER	UPPER
1	FBNDX	0.00000	0.00	0.0
2	FGRIX	0.00000	0.00	0.0
3	FCNTX	0.04097	0.05	1.0
4	_GIC_	0.07982	0.05	1.0
5	FOSFX	0.08691	0.05	1.0
6	CPO	0.10000	0.10	0.1
7	FLPSX	0.10185	0.05	1.0
8	FUSEX	0.25553	0.05	1.0
9	FMAGX	0.33491	0.05	1.0

constrai

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PROC NLP: Nonlinear Minimization

Deleted Identical Linear Constraints

0.100000 >=

NOTE: Initial point was changed to be feasible for boundary and linear constraints.

PROC NLP: Nonlinear Minimization

Null Space Method of Quadratic Problem

Parameter Estimates 9
 Lower Bounds 9
 Upper Bounds 9
 Linear Constraints 12

Optimization Start

Active Constraints (+) 8 Objective Function 0.3599771115
 Max Abs Gradient Element 0.9008402961

Iter	Restarts	Function Calls	Active Constraints	Objective Function	Objective Function Change	Max Abs Gradient Element	Step Size	Slope of Search Direction
1	0	2	8'	0.33909	0.0209	0.6148	0.477	-0.0575
2	0	3	7'	0.31213	0.0270	0.4581	1.000	-0.0539
3	0	4	6'	0.25374	0.0584	0.3220	1.000	-0.117
4	0	5	6	0.24997	0.00377	8.33E-17	1.000	-0.0075

Optimization Results

Iterations	4	Function Calls	6
Gradient Calls	5	Active Constraints	6
Objective Function	0.2499677559	Max Abs Gradient Element	2.220446E-16
Slope of Search Direction	-0.007540479		

ABSGCONV convergence criterion satisfied.

PROC NLP: Nonlinear Minimization

Optimization Results Parameter Estimates

N	Parameter	Estimate	Approx Std Err	t Value	Approx Pr > t	Gradient Objective Function	Active Bound Constraint
1	CPO	0.100000	0	9999.990000	0.000063662	9.146782	Equal BC
2	FBNDX	0	0	0	1.000000	0.596713	Equal BC
3	FCNTX	0.050000	0	9999.990000	0.000063662	0.021798	Lower BC
4	FGRIX	0	0	0	1.000000	0.605292	Equal BC
5	FLPSX	0.100616	0.359891	0.279572	0.826450	0.061883	
6	FMAXX	0.330541	0.567678	0.582268	0.664324	0.236304	
7	FOSFX	0.085201	0.058857	1.525329	0.369430	-1.056450	
8	FUSEX	0.255882	0.583954	0.438189	0.737083	0.250570	
9	_GIC_	0.077761	0.248400	0.313046	0.806861	0.283349	

Value of Objective Function = 0.2499677559

Linear Constraints Evaluated at Solution

1	ACT 4.4409E-16	=	-1.0000	+	1.0000	* CPO	+	1.0000	* FBNDX	+	1.0000	* FCNTX	+	1.0000	* FGRIX	+	1.0000	
	FLPSX	+	1.0000	* FMAGX	+	1.0000	* FOSFX	+	1.0000	* FUSEX	+	1.0000	* _GIC_					
2		0.04714	=	-0.0165	+	0.8603	* FBNDX	+	0.00320	* FCNTX	+	0.000300	* FGRIX	+	0.0146	* FOSFX	+	0.8000
	GIC																	
3		0.15286	=	0.2165	-	0.8603	* FBNDX	-	0.00320	* FCNTX	-	0.000300	* FGRIX	-	0.0146	* FOSFX	-	0.8000
	GIC																	
4		0.13883	=	0.0735	+	0.1397	* FBNDX	+	0.0581	* FCNTX	+	0.1057	* FGRIX	+	0.1915	* FLPSX	+	0.0561
	FMAGX	+	0.0814	* FOSFX	+	0.00830	* FUSEX	+	0.2000	* _GIC_								
5		0.06117	=	0.1265	-	0.1397	* FBNDX	-	0.0581	* FCNTX	-	0.1057	* FGRIX	-	0.1915	* FLPSX	-	0.0561
	FMAGX	-	0.0814	* FOSFX	-	0.00830	* FUSEX	-	0.2000	* _GIC_								
6		0.16000	=	0.0566	+	0.1800	* FCNTX	+	0.0157	* FGRIX	+	0.1304	* FLPSX	+	0.0277	* FMAGX	+	0.7889
	FOSFX	+	0.0193	* FUSEX														
7	ACT -5.204E-18	=	0.1034	-	0.1800	* FCNTX	-	0.0157	* FGRIX	-	0.1304	* FLPSX	-	0.0277	* FMAGX	-	0.7889	
	FOSFX	-	0.0193	* FUSEX														
8		0.10000	=	0.1000														
	FUSEX																	
9		0.10554	=	0.1000	+	0.00540	* FCNTX	+	0.0339	* FGRIX	+	0.00480	* FLPSX	+	0.0294	* FOSFX	+	0.00890
	FUSEX																	
10		0.09446	=	0.1000	-	0.00540	* FCNTX	-	0.0339	* FGRIX	-	0.00480	* FLPSX	-	0.0294	* FOSFX	-	0.00890
	FUSEX																	
11		0.01849	=	-0.8470	+	1.0000	* CPO	+	0.9333	* FCNTX	+	0.8601	* FGRIX	+	0.8037	* FLPSX	+	0.9439
	FMAGX	+	0.8746	* FOSFX	+	0.9828	* FUSEX	+	0.9333	* FCNTX	+	0.8601	* FGRIX	+	0.8037	* FLPSX	+	0.9439
12		0.00151	=	0.8670	-	1.0000	* CPO	-	0.9333	* FCNTX	-	0.8601	* FGRIX	-	0.8037	* FLPSX	-	0.9439
	FMAGX	-	0.8746	* FOSFX	-	0.9828	* FUSEX	-	0.9333	* FCNTX	-	0.8601	* FGRIX	-	0.8037	* FLPSX	-	0.9439

constrai
._RHS_

0.249968

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constrai

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2

Iteration 2 minobjfn = 0.2499677559 last objfnval = 0.2499677559

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PROC NLP: Nonlinear Minimization

Deleted Identical Linear Constraints

0.100000 >=

NOTE: Initial point was changed to be feasible for boundary and linear constraints.

PROC NLP: Nonlinear Minimization

Optimization Start

N	Parameter	Estimate	Parameter Estimates		Active Bound Constraint
			Gradient Objective Function	Lower Bound Constraint	Upper Bound Constraint
1	CPO	0.100000	11.650796	0.100000	0.100000
2	FBNDX	0.018669	4.171430	0	1.000000
3	FCNTX	0.050000	0.999077	0.050000	1.000000
4	FGRIX	0.831331	3.806933	0	1.000000
5	FLPSX	0	0.451713	0	1.000000
6	FMAGX	0	-0.392199	0	1.000000
7	FOSFX	0	-2.786950	0	1.000000
8	FUSEX	0	0.237452	0	1.000000
9	_GIC_	2.775558E-17	3.696729	0	1.000000

Value of Objective Function = 2.0749583504

Linear Constraints

1	3.6082E-16 : ACT	1.0000	==	+	1.0000 * CPO	+	1.0000 * FBNDX	+	1.0000 * FCNTX	+	1.0000 * FGRIX	+	1.0000
2	* FLPSX + 1.0000 * FMAGX	+	1.0000 * FOSFX	+	1.0000 * FUSEX	+	1.0000 * _GIC_	+	0.000300 * FGRIX	+	0.0146 * FOSFX	+	0.8000
3	* _GIC_	0.2165	<=	+	0.8603 * FBNDX	+	0.00320 * FCNTX	+	0.000300 * FGRIX	+	0.0146 * FOSFX	+	0.8000
4	* _GIC_	-0.0735	<=	+	0.1397 * FBNDX	+	0.0581 * FCNTX	+	0.1057 * FGRIX	+	0.1915 * FLPSX	+	0.0561
5	* FMAGX + 0.0814 * FOSFX	+	0.1265	>=	0.00830 * FUSEX	+	0.2000 * _GIC_	+	0.1057 * FGRIX	+	0.1915 * FLPSX	+	0.0561
6	* FMAGX + 0.0814 * FOSFX	+	0.00830	<=	0.00830 * FUSEX	+	0.2000 * _GIC_	+	0.1304 * FLPSX	+	0.0277 * FMAGX	+	0.7889
7	* FOSFX + 0.0193 * FUSEX	+	0.1034	>=	0.1800 * FCNTX	+	0.0157 * FGRIX	+	0.1304 * FLPSX	+	0.0277 * FMAGX	+	0.7889
8	* FOSFX + 0.0193 * FUSEX	+	0.1000	>=									
9	0.12845 : FUSEX	-0.1000	<=	+	0.00540 * FCNTX	+	0.0339 * FGRIX	+	0.00480 * FLPSX	+	0.0294 * FOSFX	+	0.00890
10	* FUSEX	0.07155 : FUSEX	0.1000	>=	0.00540 * FCNTX	+	0.0339 * FGRIX	+	0.00480 * FLPSX	+	0.0294 * FOSFX	+	0.00890
11	* FMAGX + 0.8746 * FOSFX	+	0.8470	<=	1.0000 * CPO	+	0.9333 * FCNTX	+	0.8601 * FGRIX	+	0.8037 * FLPSX	+	0.9439
12	* FMAGX + 0.8746 * FOSFX	+	0.00534 : FMAGX	>=	1.0000 * CPO	+	0.9333 * FCNTX	+	0.8601 * FGRIX	+	0.8037 * FLPSX	+	0.9439

PROC NLP: Nonlinear Minimization

Null Space Method of Quadratic Problem

Parameter Estimates 9
Lower Bounds 9
Upper Bounds 9
Linear Constraints 12

Optimization Start

Active Constraints (+) 8 Objective Function 2.0749583504
Max Abs Gradient Element 4.7054984602

Iter	Restarts	Function Calls	Active Constraints	Objective Function	Objective Function Change	Max Abs Gradient Element	Step Size	Slope of Search Direction
1	0	2	8'	1.47446	0.6005	2.4891	0.270	-2.567
2	0	3	8'	1.37975	0.0947	2.2318	0.0515	-1.888
3	0	4	7'	0.47702	0.9027	1.2026	1.000	-1.805
4	0	5	6'	0.37740	0.0996	0.5946	1.000	-0.199
5	0	6	7	0.32677	0.0506	0.4014	0.267	-0.218
6	0	7	6'	0.28177	0.0450	0.3733	1.000	-0.0900
7	0	8	7	0.25015	0.0316	0.0435	0.396	-0.0995
8	0	9	6'	0.24999	0.000155	0.0263	1.000	-0.0003
9	0	10	6	0.24997	0.000025	2.64E-16	1.000	-502E-7

Optimization Results

Iterations 9 Function Calls 11
Gradient Calls 10 Active Constraints 6
Objective Function 0.2499677559 Max Abs Gradient Element 2.220446E-16
Slope of Search Direction -0.000050238

ABSGCONV convergence criterion satisfied.

Optimization Results Parameter Estimates

	N	Parameter	Estimate	Approx Std Err	t Value	Approx Pr > t	Gradient Objective Function	Active Bound Constraint
1	1	CPO	0.100000	0	9999.990000	0.000063662	9.146782	Equal BC
2	2	FBNDX	0	0	0	1.000000	0.596713	Lower BC
3	3	FCNTX	0.050000	0	9999.990000	0.000063662	0.021798	Lower BC
4	4	FGRIX	0	0	0	1.000000	0.605292	Lower BC
5	5	FLPSX	0.100616	0.359891	0.279572	0.826450	0.061883	
6	6	FMAXX	0.330541	0.567678	0.582268	0.664324	0.236304	
7	7	FOSFX	0.085201	0.059857	1.525329	0.369430	-1.056450	
8	8	FUSEX	0.258882	0.583954	0.438189	0.737083	0.250570	
9	9	GIC_	0.077761	0.248400	0.313046	0.806861	0.283349	

Value of Objective Function = 0.2499677559

Linear Constraints Evaluated at Solution

1	ACT 1.6653E-16	=	-1.0000	+	1.0000	* CPO	+	1.0000	* FBNDX	+	1.0000	* FCNTX	+	1.0000	* FGRIX	+	1.0000	
	FLPSX	+	1.0000	* FOSFX	+	1.0000	* FUSEX	+	1.0000	* _GIC_	+	1.0000	* FLPSPX	+	1.0000	* FMAGX	+	1.0000
2	0.04714	=	-0.0165	+	0.8603	* FBNDX	+	0.00320	* FCNTX	+	0.000300	* FGRIX	+	0.0146	* FOSFX	+	0.8000	
	GIC																	
3	0.15286	=	0.2165	-	0.8603	* FBNDX	-	0.00320	* FCNTX	-	0.000300	* FGRIX	-	0.0146	* FOSFX	-	0.8000	
	GIC																	
4	0.13883	=	0.0735	+	0.1397	* FBNDX	+	0.0581	* FCNTX	+	0.1057	* FGRIX	+	0.1915	* FLPSPX	+	0.0561	
	FMAGX	+	0.0814	* FOSFX	+	0.00830	* FUSEX	+	0.2000	* _GIC_	+	0.1057	* FGRIX	+	0.1915	* FLPSPX	+	0.0561
5	0.06117	=	0.1265	-	0.1397	* FBNDX	-	0.0581	* FCNTX	-	0.1057	* FGRIX	-	0.1915	* FLPSPX	-	0.0561	
	FMAGX	-	0.0814	* FOSFX	-	0.00830	* FUSEX	-	0.2000	* _GIC_	-	0.1057	* FGRIX	-	0.1915	* FLPSPX	-	0.0561
6	0.16000	=	0.0566	+	0.1800	* FCNTX	+	0.0157	* FGRIX	+	0.1304	* FLPSPX	+	0.0277	* FMAGX	+	0.7889	
	FOSFX	+	0.0193	* FUSEX	+													
7	ACT 2.2551E-17	=	0.1034	-	0.1800	* FCNTX	-	0.0157	* FGRIX	-	0.1304	* FLPSPX	-	0.0277	* FMAGX	-	0.7889	
	FOSFX	-	0.0193	* FUSEX	-													
8	0.10000	=	0.1000															
9	0.10554	=	0.1000	+	0.00540	* FCNTX	+	0.0339	* FGRIX	+	0.00480	* FLPSPX	+	0.0294	* FOSFX	+	0.00890	
	FUSEX																	
0	0.09446	=	0.1000	-	0.00540	* FCNTX	-	0.0339	* FGRIX	-	0.00480	* FLPSPX	-	0.0294	* FOSFX	-	0.00890	
	FUSEX																	
1	0.01849	=	-0.8470	+	1.0000	* CPO	+	0.9333	* FCNTX	+	0.8601	* FGRIX	+	0.8037	* FLPSPX	+	0.9439	
	FMAGX	+	0.8746	* FOSFX	+	0.9828	* FUSEX	+	0.9828	* CPO	+	0.9333	* FCNTX	+	0.8037	* FLPSPX	+	0.9439
2	0.00151	=	0.8670	-	1.0000	* CPO	-	0.9333	* FCNTX	-	0.8601	* FGRIX	-	0.8037	* FLPSPX	-	0.9439	
	FMAGX	-	0.8746	* FOSFX	-	0.9828	* FUSEX	-	0.9828	* CPO	-	0.9333	* FCNTX	-	0.8037	* FLPSPX	-	0.9439

Iteration 2 minobjfn = 0.2499677559 last objfnval = 0.2499677559

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RHS

0.249968

Iteration 2 minobjfn = 0.2499677559 last objfnval = 0.2499677559

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1

Iteration 3 minobjfn = 0.2499677559 last objfnval = 0.2499677559

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PROC NLP: Nonlinear Minimization

Deleted Identical Linear Constraints

0.100000 >=

NOTE: Initial point was changed to be feasible for boundary and linear constraints.

PROC NLP: Nonlinear Minimization

N	Parameter	Estimate	Optimization Start			Upper Bound Constraint	Active Bound Constraint
			Parameter Estimates		Lower Bound Constraint		
			Gradient	Objective Function			
1	CPO	0.100000	11.681492	0.100000	0.100000	Equal	BC
2	FNDX	0.018837	4.249768	0	1.000000	Equal	BC
3	FCNTX	0	0.808016	0	0		
4	FGRIX	0.881163	3.989171	0	1.000000		
5	FLPSX	0	0.453036	0	1.000000		
6	FNAGX	6.938894E-18	-0.342507	0	1.000000	Lower	BC
7	FOSEFX	0	-2.933409	0	1.000000	Lower	BC
8	FUSEX	-2.77556E-17	0.357369	0	1.000000	Lower	BC
9	GIC_	0	3.783097	0	1.000000	Lower	BC

Value of Objective Function = 2.2247362956

Linear Constraints

1	9.0206E-17	: ACT	1.0000	==	+	1.0000	* CPO	+	1.0000	* FBNDX	+	1.0000	* FCNTX	+	1.0000	* FGRIX	+	1.0000
2	-5.93E-19	: ACT	0.0165	<=	+	0.8603	* FBNDX	+	0.00320	* FCNTX	+	0.000300	* FGRIX	+	0.0146	* FOSFX	+	0.8000
3	* -GIC_				+	0.8603	* FBNDX	+	0.00320	* FCNTX	+	0.000300	* FGRIX	+	0.0146	* FOSFX	+	0.8000
4	* -GIC_				+	0.1397	* FBNDX	+	0.0581	* FCNTX	+	0.1057	* FGRIX	+	0.1915	* FLPSX	+	0.0561
5	* FMAGX	+	0.03073	+	0.0814	* FOSFX	+	0.00830	* FUSEX	+	0.2000	* _GIC_			0.1915	* FLPSX	+	0.0561
6	* FMAGX	+	0.0814	* FOSFX	+	0.0814	* FOSFX	+	0.00830	* FUSEX	+	0.2000	* _GIC_		0.1915	* FLPSX	+	0.0561
7	* FMAGX	+	0.07040	+	-0.0566	<=	+	0.1800	* FCNTX	+	0.0157	* FGRIX	+	0.1304	* FLPSX	+	0.0277	* FMAGX
8	* FOSFX	+	0.0193	* FUSEX														0.7889
9	* FOSFX	+	0.08959	+	0.1034	>=	+	0.1800	* FCNTX	+	0.0157	* FGRIX	+	0.1304	* FLPSX	+	0.0277	* FMAGX
10	* FOSFX	+	0.0193	* FUSEX														0.7889
11	* FOSFX	+	0.10000	+	0.1000	>=	+											
12	* FOSFX	+	0.12987	+	-0.1000	<=	+	0.00540	* FCNTX	+	0.0339	* FGRIX	+	0.00480	* FLPSX	+	0.0294	* FOSFX
13	* FOSFX	+	0.07013	+	0.1000	>=	+	0.00540	* FCNTX	+	0.0339	* FGRIX	+	0.00480	* FLPSX	+	0.0294	* FOSFX
14	* FOSFX	+	0.01086	+	0.8470	<=	+	1.0000	* CPO	+	0.9333	* FCNTX	+	0.8601	* FGRIX	+	0.8037	* FLPSX
15	* FMAGX	+	0.8746	* FOSFX	+	0.9828	* FUSEX	+	0.9828	* FUSEX	+	0.9333	* FCNTX	+	0.8601	* FGRIX	+	0.8037
16	* FMAGX	+	0.00914	+	0.8670	>=	+	1.0000	* CPO	+	0.9333	* FCNTX	+	0.8601	* FGRIX	+	0.8037	* FLPSX
17	* FMAGX	+	0.8746	* FOSFX	+	0.9828	* FUSEX	+	0.9828	* FUSEX	+	0.9333	* FCNTX	+	0.8601	* FGRIX	+	0.8037

PROC NLP: Nonlinear Minimization

Null Space Method of Quadratic Problem

Parameter Estimates 9
 Lower Bounds 9
 Upper Bounds 9
 Linear Constraints 12

Optimization Start

Active Constraints (+) 8 Objective Function 2.2247362956
 Max Abs Gradient Element 4.9386144316

Iter	Restarts	Function Calls	Active Constraints	Objective Function	Objective Function Change	Max Abs Gradient Element	Step Size	Slope of Search Direction
1	0	2	8'	1.53617	0.6886	2.5366	0.284	-2.828
2	0	3	8'	1.30289	0.2333	2.1082	0.127	-1.961
3	0	4	7'	0.49740	0.8055	1.2956	1.000	-1.611
4	0	5	6'	0.38178	0.1156	0.5746	1.000	-0.231
5	0	6	7	0.30634	0.0754	0.2703	0.490	-0.204
6	0	7	6'	0.28593	0.0204	0.3634	1.000	-0.0408
7	0	8	7	0.25601	0.0299	0.0424	0.396	-0.0943
8	0	9	6'	0.25586	0.000147	0.2336	1.000	-0.0003
9	0	10	6	0.25388	0.00198	2.22E-16	1.000	-0.0040

Optimization Results

Iterations 9 Function Calls 11
 Gradient Calls 10 Active Constraints 6
 Objective Function 0.2538751079 Max Abs Gradient Element 2.775558E-16
 Slope of Search Direction -0.003969247

ABSGCONV convergence criterion satisfied.

PROC NLP: Nonlinear Minimization

Optimization Results Parameter Estimates

N	Parameter	Estimate	Approx Std Err	t Value	Approx Pr > t	Gradient Objective Function	Active Bound Constraint
1	CPO	0.100000	0	9999.990000	0.000063662	9.079157	Equal BC
2	FBNDX	0	0	0	1.000000	0.624892	Lower BC
3	FCNTX	0	0	0	1.000000	-0.187342	Equal BC
4	FGRIX	0	0	0	1.000000	0.598914	Lower BC
5	FLPSX	0.107469	0.359891	0.298616	0.815262	0.100740	
6	FMAGX	0.354761	0.567678	0.624933	0.644415	0.282191	
7	FOSEFX	0.094673	0.05857	1.694913	0.339340	-1.1062665	
8	FUSEX	0.253954	0.583954	0.438867	0.738849	0.297033	
9	GIC	0.089143	0.248400	0.358869	0.780650	0.331132	

Value of Objective Function = 0.2538751079

Linear Constraints Evaluated at Solution

[illegible]

Iteration 3 minobjfn = 0.2499677559 last objfnval = 0.2499677559

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RHS

0.253875

Iteration 3 minobjfn = 0.2499677559 last objfnval = 0.2499677559

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RHS

0.249968